

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2019/2020

**BBF3124 – FINANCIAL DERIVATIVES**

(All Sections/Groups)

23 OCTOBER 2019

2.30 p.m - 4.30 p.m

(2 Hours)

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### INSTRUCTIONS TO STUDENT

1. This question paper consists of 4 pages with 4 Questions
2. Attempt all **FOUR** questions. The distribution of the marks for each question is given.
3. Please write all your answers in the Answer Booklet provided.

**QUESTION 1**

- (a) Evaluate the features between over-the-counter (OTC) contracts and exchange traded contracts. Deliberate **THREE (3)** benefits of OTC contracts vis-a-vis exchange traded contracts.

(7 marks)

- (b) As an active trader, Mr. Robert believed that a bullish trend is on its way, thus he decided to purchase 4 June FTSE Bursa Malaysia KLCI Futures (FKLI) at 1500 and holds the position for the next five days. The initial margin for the trade is 30% and maintenance margin is 80% of the initial margin. Below is the expected settlement price.

Day	Settlement Price
0	1500
1	1450
2	1400
3	1475
4	1515
5	1545

- (i) Tabulate the mark to market table by showing Mr. Robert's account balance. Is there any margin call? If yes, on which day?

(16 marks)

- (ii) What is the net profit/loss from the trade?

(2 marks)

(Total: 25 marks)

**QUESTION 2**

- (a) According to New Straits Times (2019), Malaysia's Nikkei Manufacturing PMI slips to 47.8 in June, which this has created great opportunities for arbitrageurs. The following information obtained from the spot market.

90 days KLIBOR = 6.55%  
180 days KLIBOR = 7.90%

The 3-month KLIBOR futures is priced at 92.50

- (i) Is there any arbitrage opportunity? Calculate the correct price. (6 marks)
- (ii) Construct the most appropriate strategy (2 marks)
- (b) As the active hedge fund manager, you are constantly looking for opportunities to reduce your managed stock portfolio beta. Due to the recent US-China trade war, you wish to reduce your beta to 1.30 from the initial stock portfolio beta, 1.80. The stock portfolio that you currently managed worth RM 3.8million and the FBM KLCI is 1600 points. Show how your desired objective can be achieved through using SIF contracts. Evaluate the number of contracts to be hedged. (5 marks)
- (c) Mr. Hunter is in charge of the arbitrage desk of a hedge fund company, he observed the following quotes:
- |                         |                  |
|-------------------------|------------------|
| GAMUDA BHD              | : RM 3.90        |
| GAMUDA BHD. 3-month SSF | : RM 4.08        |
| 3-month KLIBOR          | : 3% p.a.        |
| SSF Contract Size       | : 100,000 shares |
- From the information gathered. Mr. Hunter know that GAMUDA BHD just went ex-dividend and thus, dividend is not expected in the next 3-month.
- (i) Given the above information, evaluate is there any arbitrage opportunity. Construct the suitable strategy and named the strategy. (5 marks)
- (ii) Estimating the net profit/loss by assuming 300,000 shares will be placed. Assuming GAMUDA BHD. is at RM 5.20 in 90 days. (7 marks)
- (Total: 25 marks)

**QUESTION 3**

On May 31, 2019, US President, Donald Trump had blacklisted Huawei which this action has indirectly admitted the trade war between US and China. Subsequently, both US and China President resume the trade negotiation at 2019 G20 Osaka summit on June 29, 2019. Both of the events have created great uncertainty in the market. You have formed a portfolio of stocks when the FBM KLCI stood at 1,600 points on July 1, 2019. Hence, as a professional trader, you have been instructed to come out with the best strategy to earn unlimited profit and limited loss. The following FTSE Bursa Malaysia KLCI Futures (FKLI) are available.

- October 1,300 points FBM KLCI call options @ 60 points
- October 1,600 points FBM KLCI call options @ 50 points
- October 1,900 points FBM KLCI call options @ 40 points
- October 1,300 points FBM KLCI put options @ 30 points
- October 1,600 points FBM KLCI put options @ 50 points
- October 1,900 points FBM KLCI put options @ 60 points

- (a) Construct the strategy and name it. Supports your answer with payoff table and payoff graph by showing the limited loss and the breakeven points. Interval of 50 points should be tabulated. Rationalize the said strategy.

(25 marks)

(Total: 25 marks)

**QUESTION 4**

- (a) According to the theory, hedging strategy is aim to reduce risks involved. It would lead to a situation where a loss in one market (e.g. spot market) will be covered by profit in another market (e.g. futures market). Nevertheless, it does not apply for company like MASSCOV BHD. This is because the company has suffer a loss of USD 2.3 billion in the hedging activities.

Below is what had happened:

MASSCOV BHD is an established international sugar distributor to supply sugar at a fixed price. Because of the recent market movement, the company's Chief Financial Officer (CFO) has decided to hedge the spot price and he expect the sugar price will increase in the next 12 months. Thus, the CFO decided to enter LONG positions in a few short term futures contracts. Unfortunately, the price of sugar dropped significantly in the short term causing the company to pay margin calls for its LONG positions in the futures market. The company was forced to discontinue its futures trading due to inability to pay the margin call. MASSCOV BHD is unable to pay the margin payment because its company financial constrain.

Evaluate the possible reasons why MASSCOV BHD suffered a significant loss in the futures market.

(8 marks)

- (b) VIVOCOM BHD currently is selling at RM 3 with its exercise price of RM 2.80. It is expected that the price can move up and down by 15% over the next 2 periods. You believe that the probability of the downward movement should be 17%. The risk free interest rate is 10%. Using multi-period binomial option pricing model to solve the following questions:

- (i) Draw the two-period binomial stock price path by indicating the first period stock price and the second period stock price.

(12 marks)

- (ii) Determine new call value holding all other factors constant.

(5 marks)

(Total: 25 marks)